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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,921	06/02/2000	David Eppes	AMDA.478PA	6312

7590 03/11/2003

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EXAMINER	
NGUYEN, JIMMY	
ART UNIT	**PAPER NUMBER**
2829	

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/585,921	Applicant(s) EPPES ET AL.	
	Examiner Jimmy Nguyen	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-31* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Argument

1. Applicant's arguments with respect to claims 1-13 and 15 -31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1 – 13 and 15 - 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Hsu (US 6265888).

As to claims 1, 8, 9, Hsu discloses (fig 1a) a method for manufacturing and

analyzing (10) a semiconductor die (14) including;

Forming a plurality of heating elements (16) in the die (14)

While operating the die (14, the die operate by connecting to the testing apparatus 14), selectively controlling the heating elements (column 4 line 60 –67 and column 5 line 1-5) and therein using at least one of the heating elements (16) at least one adjacent portion of the die (14)

Analyzing the die via operation (by the testing apparatus 10)

As to claim 2, Hsu discloses (fig 1a) the operation of the die (14) includes a test pattern (running by connecting the probe 13) on a portion of the die (14) suspected to cause a failure

As to claim 3, Hsu discloses (fig 1a) the method for manufacturing and analyzing a semiconductor die (14) the die includes electrically coupling the die (14) to a signal generator adapted to supply test signals (by probe card 13to the die.

As to claim 4, Hsu discloses (fig 1a) detecting that die (14) is malfunctioning (by the testing apparatus).

As to claims 5, 6, Hsu discloses (fig 1a) the portion of the die (14) being heated at the time that a malfunction is detected and correlating the portion of the die being heated to a critical timing path.

As to claim 7, Hsu discloses (fig 1a) the flip chip bonded die (14) and a wire bonded die.

As to claims 10, 11, Hsu discloses (fig 1a) selectively controlling (column 4 line 60 – 67 and column 5 line 1-5) the heating elements (16) includes causing a portion of the die to heat to a selected temperature and selected at a sequence.

As to claims 12, 13, 21 Hsu discloses (fig 1a) selectively controlling (column 4 line 60 –67 and column 5 line 1-5) the heating elements (16) includes causing at least two of the heating elements to generate heat, and wherein the at least two of the heating elements are located sufficiently distant from each other so that the heat from one does not interfere with heat from another one of elements the plurality of heating elements in the die includes grid of heating elements.

As to claims 15 - 20, **26**, Hsu discloses (fig 1a) detecting a temperature characteristic related to the heated portion of the die (14); and in response to the detected temperature characteristic (by the sensor 27), controlling the heating via a feedback loop, control register and using temperature sensor (column 4 line 60 –67 and column 5 line 1-5).

As to claims 22 , 23, Hsu discloses (fig 1a) a test system including Control (column 4 line 60 –67 and column 5 line 1-5).eans for selectively causing at least one of the heating elements (16) to generate heat and to heat a portion of the die (14) therefrom;

Operating (by the testing apparatus 10) means for operating the die (14); and

Detection (from the testing system) means for detecting a response from the die (12)

As to claims 24, 30, Hsu discloses (fig 1a) the testing device (not shown, by the testing apparatus 10, external tester) and the controller are included in a single testing arrangement

As to claims 25, Hsu discloses (fig 1a) each heating element (16) includes at least one of resistive metal, a transistor, a diode, doped metal and a polysilicon trace

As to claims 27- 29, 31, Hsu discloses (fig 1a) a stage (vacuum chuck 11) to hole the die (14) and electrically couple the die to the testing device (computer not shown external tester)

Allowable Subject Matter

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the prior arts of record does not disclose the method of selectively controlling the heating elements comprise the step of grouping the heating elements into selected groups, each group having two or more heating elements; causing the selected groups to heat in a response;

detecting a response from the die that indicates that the die is operating defectively; and in response to detecting defective operation, identifying the selected group being caused to heat when the response is detected; and selectively operating individual heating elements of the selected group.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Nguyen at (703) 306-5858. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.

JN.
March 7, 2003

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